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DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
WASHINGTON

FOURTEENTH CENSUS OF THE UNITED STATES
MANUFACTURES: 1919

CAST-IRON PIPE

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EXPLANATION OF TERMS.

Scope of census.—Census statistics of manufactures are compiled primarily for the purpose of showing the absolute and relative magnitude of the different branches of industry covered and their growth or decline. Incidentally, the effort is made to present data throwing light upon character of ownership, size of establishments, and similar subjects. When use is made of the statistics for these purposes it is imperative that due attention be given to their limitations, particularly in connection with any attempt to derive from them figures purporting to show average wages, cost of production, or profits.

The census did not cover establishments which were idle during the entire year or for which products were valued at less than \$500, or the manufacturing done in educational, eleemosynary, and penal institutions.

Period covered.—The returns relate to the calendar year 1919, or the business year which corresponded most nearly to that calendar year, and cover a year's operations, except for establishments which began or discontinued business during the year.

The establishment.—As a rule, the term "establishment" represents a single plant or factory, but in some cases it represents two or more plants which were operated under a common ownership or for which one set of books of account was kept. If, however, the plants constituting an establishment as thus defined were not all located within the same city, county, or state, separate reports were secured in order that the figures for each plant might be included in the statistics for the city, county, or state in which it was located. In some instances separate reports were secured for different industries carried on in the same establishment.

Classification by industries.—The establishments were assigned to the several classes of industries according to their products of chief value. The products reported for a given industry may thus, on the one hand, include minor products different from those covered by the class designation, and, on the other hand, may not represent the total product covered by this designation, because some products of this class may be made in establishments in which it is not the product of chief value.

Influence of increased prices.—In comparing figures for cost of materials, value of products, and value added by manufacture in 1919 with the corresponding figures for earlier censuses, account should be taken of the general increase in the prices of commodities during recent years. To the extent to which this factor has been influential the figures fail to afford an exact measure of the increase in the volume of business.

Persons engaged in the industry.—The following general classes of persons engaged in the manufacturing industries were distinguished: (1) Proprietors and firm members, (2) salaried officers of corporations, (3) superintendents and managers, (4) clerks (including other subordinate salaried employees), and (5) wage earners.

The number of persons engaged in each industry, segregated by sex, and, in the case of wage earners, also by age (whether under 16 or 16 and over), was reported for a single representative day. The 15th of December was selected as representing for most industries normal conditions of employment, but where this date did not portray such conditions, an earlier date was requested.

In the case of employees other than wage earners the number thus reported for the representative date has been treated as equivalent to the average for the year, since the number of employees of this class does not ordinarily vary much from month to month. In the case of wage earners the average has been obtained in the manner explained in the next paragraph.

In addition to the more detailed report by sex and age of the number of wage earners on the representative date, a report was obtained of the number employed on the 15th of each month, by sex, without distinction of age. From these figures the average number of wage earners for the year has been calculated by dividing the sum of the numbers reported for the several months by 12. The importance of the industry as an employer of labor is believed to be more accurately measured by this average than by the number employed at any one time or on a given day.

The number of wage earners reported for the representative day, though given in certain tables for each separate industry, is not totaled for all industries combined, because, in view of the variations of date, such a total is not believed to be significant. It would involve more or less duplication of persons working in different industries at different times, would not represent the total number employed in all industries at any one time, and would give an undue weight to seasonal industries as compared with industries in continual operation.

In order to determine as nearly as possible the age distribution of the average number of wage earners for an industry, the per cent distribution by age of the wage earners for December 15, or the nearest representative day, has been calculated from the actual numbers reported for that date. The percentages thus obtained have been applied to the average number of wage earners for the year to determine the average numbers 16 years and over, and under 16, employed.

Salaries and wages.—Under these heads are given the total payments during the year for salaries and wages, respectively. The Census Bureau has not undertaken to calculate the average annual earnings of either salaried employees or wage earners. Such averages would possess little real value, because they would be based on the earnings of employees of both sexes, of all ages, and of widely varying degrees of skill. Furthermore, so far as wage earners are concerned, it would be impossible to calculate

late accurately even so simple an average as this, since the number of wage earners fluctuates from month to month in every industry, and in some cases to a very great extent. The Census Bureau's figures for wage earners, as already explained, are averages based on the number employed on the 15th of each month, and while representing the number according to the pay rolls to whom wages were paid on that date, no doubt represent a larger number than would be required to perform the work in any industry if all were continuously employed during the year.

Prevailing hours of labor.—No attempt was made to ascertain the number of wage earners working a given number of hours per week. The inquiry called merely for the prevailing practice followed in each establishment. Occasional variations in hours in an establishment from one part of the year to another were disregarded, and no attention was paid to the fact that a few wage earners might have hours differing from those of the majority. All the wage earners of each establishment are therefore counted in the class within which the establishment itself falls. In most establishments, however, practically all the wage earners work the same number of hours, so that the figures give a substantially correct representation of the hours of labor.

Capital (amount actually invested).—The instructions on the schedule for securing data relating to capital were as follows:

"The answer should show the total amount of capital, both owned and borrowed, on the last day of the business year reported. All the items of fixed and live capital may be taken at the amounts carried on the books. If land or buildings are rented, that fact should be stated and no value given. If a part of the land or buildings is owned, the remainder being rented, that fact should be so stated and only the value of the owned property given. Do not include securities and loans representing investments in other enterprises."

These instructions were identical with those employed at the censuses of 1914 and 1919. The data compiled in respect to capital, however, at both censuses, as well as at all preceding censuses of manufactures, have been so defective as to be of little value except as indicating general conditions. In fact, it has been repeatedly recommended by the census authorities that this inquiry be omitted from the schedule. While there are some establishments whose accounting systems are such that an accurate return for capital could be made, this is not true of the great majority, and the figures therefore do not show the actual amount of capital invested.

Materials.—The statistics as to cost of materials relate to the materials used during the year, which may be more or less than the materials purchased during the year. The term "materials" covers fuel, rent of power and heat, mill supplies, and containers, as well as materials which form a constituent part of the product.

Rent and taxes.—The taxes include certain Federal taxes and state, county, and local taxes. Under "Federal taxes" there are included the internal revenue tax on manufactures (tobacco, beverages, etc.), excise taxes when included in values reported for products, corporation capital stock tax, and corporation income tax, but not the income tax for individuals and partners.

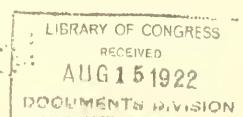
Value of products.—The amounts given under this heading represent the selling value or price at the factory of all products manufactured during the year, which may differ from the value of the products sold.

Value added by manufacture.—The value of products is not always a satisfactory measure of either the absolute or the relative importance of a given industry, because only a part of this value is actually created by the manufacturing processes carried on in the industry itself. Another part, and often by far the larger one, represents the value of the materials used. For many purposes, therefore, the best measure of the importance of an industry, from a manufacturing standpoint, is the value created by the manufacturing operations carried on within the industry. This value is calculated by deducting the cost of the materials used from the value of the products. The figure thus obtained is termed in the census reports "value added by manufacture."

Cost of manufacture and profits.—The census data do not show the entire cost of manufacture, and consequently can not be used for the calculation of profits. No account has been taken of depreciation or interest, rent of offices and buildings other than factory or works, insurance, ordinary repairs, advertising, and other sundry expenses.

Primary horsepower.—This item represents the total primary power equipment of the manufacturing establishments plus the amount of power, principally electric, rented from other concerns. It does not cover the power of electric motors taking their current from dynamos driven by primary power machines operated by the same establishment, because the inclusion of such power would obviously result in duplication. The figures for primary horsepower represent the rated capacity of the engines, motors, etc., and not the amount of power in actual daily use.

Fuel.—Statistics of the quantity of fuel used are shown only for anthracite and bituminous coal, coke, fuel oils, gasoline and other volatile oils, and gas, and represent the quantity used during the year. As only the principal kinds of fuel are shown, comparison as to the total cost of all fuel is impracticable.



CAST-IRON PIPE.

GENERAL STATISTICS.

General character of the industry. Establishments primarily engaged in the manufacture of cast-iron pipe were first segregated as an industry at the census of 1909. Prior thereto they were included with those for foundry and machine-shop products, which included iron foundries not specially provided for.

Comparative summary. Table 1 presents the general statistics for 1919, 1914, and 1909.

Principal states, ranked by value of products. Statistics are presented in Table 2 for the chief factors: Number of establishments; number of wage earners; value of products; and value added by manufacture, for all states for which the statistics can be reported.

Persons engaged in the industry.—The age classification of the average number of wage earners in Table 3 is an estimate obtained by the method described in the "Explanation of terms." Figures for states will be found in Table 12.

Wage earners, by months. The statistics for wage earners in Table 4 show the labor movement in accordance with the industrial conditions existing throughout the year.

Prevailing hours of labor.—Table 5 shows that of the total number of wage earners employed only 3.1 per cent were in establishments where the prevailing hours per week were 48 or fewer in 1909, and 1.4 per cent in 1914. In 1919 this ratio was 12.4 per cent. On the other hand, in 1909, 76 per cent were in the "60 hours

per week" group, and in 1914, 64 per cent, whereas in 1919 this group carried but 21.4 per cent.

Size of establishments, by average number of wage earners. Table 6 shows the industry to be one of relatively large units. Only six establishments with 180 wage earners are found in the groups employing 50 wage earners or less in 1919 and nine establishments with 179 wage earners in 1914.

Size of establishments, by value of products. The average value of products per establishment for all classes in 1919 was approximately \$850,000, as compared with \$450,000 in 1914 and \$700,000 in 1909. The increase from 1914 to 1919 was due primarily to enhanced values, and as a result, Table 7, being based upon value of products, shows heavy gains in the higher groups.

Character of ownership. The industry is almost entirely under corporate ownership. Of the 59 establishments, 56 are owned by corporations, and they reported 98.4 per cent of the value of all products.

Number and horsepower of types of prime movers. Table 8 gives the total horsepower reported for the industry. Of the total primary power, 60 per cent was purchased electric power in 1919, as compared with 31.7 per cent in 1914 and 14.9 in 1909.

Fuel consumed. Table 9 shows the consumption of fuel, by kinds and by states. The figures for gas include both manufactured and natural gas.

TABLE 1.—COMPARATIVE SUMMARY: 1919, 1914, AND 1909.

	PER CENT OF INCREASE, ¹							PER CENT OF INCREASE, ¹					
	1919			1914				1919			1914		
	1914	1909-1914	1919	1914	1919	1914	1919	1914	1919	1914	1919	1914	1919
Number of establishments	59	59	52	11.4	11.4	11.4	11.4	1919	17	17	17	111.2	9.2
Persons engaged	13,777	13,290	12,884	3.7	3.7	3.7	3.7	1919	1,112	1,112	1,112	1,112	1,112
Proprietors and firm members	4	8	7	11.7	11.7	11.7	11.7	1919	2,431	2,431	2,431	13.6	12.1
Salaried employees	1,148	725	649	58.3	58.3	58.3	58.3	1919	14,762	14,762	14,762	14,762	14,762
Wage earners (average number)	12,625	12,557	12,228	0.5	2.7	2.7	2.7	1919	1,267	1,267	1,267	11.1	17.5
Primary horsepower	28,740	23,864	18,737	11.1	38.0	38.0	38.0	1919	25,386	25,386	25,386	10.9	16.3
Capital	\$42,863,025	\$26,984,070	\$23,110,318	58.9	16.7	16.7	16.7	1919	50,235,101	26,659,955	29,154,723	8.3	8.6

¹ A minus sign (−) denotes decrease. Per cent omitted where base is less than 100.

² Value of products, less cost of materials.

MANUFACTURES.

TABLE 2.—PRINCIPAL STATES, RANKED BY VALUE OF PRODUCTS: 1919.

STATE.	Number of establish- ments.	WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
		Average number.	Per cent distribution.	Rank.	Amount (expressed in thou- sands).	Per cent distribution.	Rank.	Amount (expressed in thou- sands).	Per cent distribution.	Rank.
United States.....	59	12,625	100.0	.....	\$50,235	100.0	.....	\$24,849	100.0	.....
Alabama.....	21	5,285	41.9	1	18,784	37.4	1	9,323	37.5	1
New Jersey.....	8	2,035	16.1	2	9,030	18.0	2	4,293	17.3	3
Pennsylvania.....	7	1,707	13.5	3	8,710	17.3	3	4,556	18.4	2
New York.....	5	312	2.5	7	1,342	2.7	7	758	3.0	7
All other states.....	18	3,286	26.0	.....	12,369	24.6	.....	5,919	23.8	.....

TABLE 3.—PERSONS ENGAGED IN THE INDUSTRY: 1919, 1914, AND 1909.

CLASS.	Cen- sus year.	Total.	PER CENT OF TOTAL.		CLASS.	Cen- sus year.	Total.	PER CENT OF TOTAL.		CLASS.			
			Male.	Fe- male				Male.	Fe- male				
All classes.....	1919	13,777	13,545	232	98.3	1.7	Clerks and other subordinate salaried employees.	1919	725	549	176	75.7	24.3
	1914	13,290	13,190	100	99.2	0.8		1914	545	450	86	84.2	15.8
	1909	12,884	12,832	52	99.6	0.4		1909	461	424	36	91.1	8.6
Proprietors and officials.....	1919	427	423	4	99.1	0.9	Wage earners (average number).....	1919	12,625	12,573	52	99.6	0.4
	1914	188	187	1	99.5	0.5		1914	12,557	12,544	13	99.9	0.1
	1909	192	192	.....	.....	.....		1909	12,228	12,216	12	99.9	0.1
Proprietors and firm members.....	1919	3	1	.....	100.0	.....	16 years of age and over.....	1919	12,585	12,536	52	99.6	0.4
	1914	8	8	.....	100.0	.....		1914	12,507	12,494	13	99.9	0.1
	1909	7	7	.....	100.0	.....		1909	12,155	12,143	12	99.9	0.1
Salaried officers of corporations.....	1919	105	105	3	97.2	2.8	Under 16 years of age.....	1919	37	37	.....	100.0	.....
	1914	78	78	.....	100.0	.....		1914	50	50	.....	100.0	.....
	1909	61	61	.....	100.0	.....		1909	73	73	.....	100.0	.....
Superintendents and managers.....	1919	315	314	1	99.7	0.3							
	1914	102	101	1	99.0	1.0							
	1909	124	121	.....	100.0	.....						

TABLE 4.—WAGE EARNERS, BY MONTHS, FOR STATES: 1919.

[The month of maximum employment for each state is indicated by **bold-faced** figures and that of minimum employment by *italic* figures.]

STATE.	Average number em- ployed during year.	NUMBER EMPLOYED ON 15TH DAY OF THE MONTH OR NEAREST REPRESENTATIVE DAY.											Per cent mini- mum is of maxi- mum.	
		January	Febru- ary.	March.	April.	May.	June.	July.	August.	Septem- ber.	Octo- ber.	Novem- ber.	Decem- ber.	
United States:														
1919.....	12,625	10,615	9,924	9,755	10,529	11,268	11,482	13,006	13,781	14,625	15,478	15,454	15,585	62.6
Males.....	12,573	10,569	9,883	9,778	10,494	11,227	11,431	12,960	13,723	14,570	15,407	15,385	15,506	62.7
Females.....	52	46	41	55	45	41	48	46	58	55	71	69	79	44.3
1914.....	12,557	11,816	12,572	13,193	12,701	12,613	12,849	13,221	13,427	13,211	12,555	11,336	11,190	53.3
Alabama.....	5,285	3,830	3,551	3,719	4,189	4,539	4,598	5,777	6,010	6,496	6,900	6,863	6,948	51.1
New Jersey.....	2,033	1,909	1,657	1,602	1,842	1,914	2,030	2,059	2,221	2,197	2,330	2,278	2,372	67.5
New York.....	312	300	326	317	303	316	261	277	309	314	312	356	353	73.3
Pennsylvania.....	1,707	1,620	1,329	1,434	1,492	1,705	1,692	1,720	1,769	1,861	1,950	1,923	1,869	73.3
All other states.....	3,286	2,957	2,961	2,691	2,703	2,794	2,901	3,163	3,472	3,737	3,986	4,034	4,043	65.8

CAST-IRON PIPE.

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TABLE 5.—AVERAGE NUMBER OF WAGE EARNERS, BY PREVAILING HOURS OF LABOR PER WEEK, FOR STATES: 1919 AND 1914

STATE.	Cen-	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—						STATE.	Cen-	IN ESTABLISHMENTS WHERE THE PREVAILING HOURS OF LABOR PER WEEK WERE—						
		s	48 and under.		Between 48 and 54.		Between 54 and 60.		s	s	48 and under.		Between 48 and 54.		Between 54 and 60.	
			Total.	Be-	Be-	Be-	Be-	Be-			Total.	Be-	Be-	Be-	Be-	
United States.....	1919	12,625	11,564	440	4,709	3,208	2,701		New York.....	1919	312	63	68	138	43	...
	1914	12,557	171	1,303	3,026	8,657			Pennsylvania.....	1919	1,707	...	130	673	346	358
	1909	12,228	378	1,425	1,131	9,264				1914	1,835	...	101	194	1,540	
Alabama.....	1919	5,285	11,032	1,580	1,456	1,217										
	1914	3,696	113	795	802	1,986										
New Jersey.....	1919	2,035	...	242	548	741	504									
	1914	3,421	...	100	1,875	1,446										

¹ Includes 293 of group "44 and under."

² Figures for 1914 not available.

TABLE 6.—SIZE OF ESTABLISHMENTS, BY AVERAGE NUMBER OF WAGE EARNERS, FOR STATES: 1919 AND 1914.

STATE.	Cen-	ESTABLISHMENTS EMPLOYING—												Over 1,000 wage earners.	
		TOTAL.		1 to 5 wage earners, inclusive.		6 to 20 wage earners, inclusive.		21 to 50 wage earners, inclusive.		51 to 100 wage earners, inclusive.		101 to 250 wage earners, inclusive.			
		Establish-ments	Wage earners (average number)	Establish-ments	Wage earners	Establish-ments	Wage earners	Establish-ments	Wage earners	Establish-ments	Wage earners	Establish-ments	Wage earners		
United States.....	1919	59	12,625	2	...	2	15	4	165	14	961	20	3,310	14	4,772
	1914	59	12,557	2	...	3	39	4	132	12	924	18	2,589	14	4,825
Alabama.....	1919	21	5,285	1	4	2	31	1	35	5	341	8	1,291	6	1,950
	1914	20	3,696	1	4	2	31	1	35	3	237	8	1,149	3	3,988
New Jersey.....	1919	8	2,035	...	...	...	...	...	...	2	145	3	559	2	770
	1914	9	3,421	...	...	...	...	...	...	1	100	3	516	3	1,206
New York ¹	1919	5	312	...	...	...	...	2	86	3	226	...	...	...	...
Pennsylvania.....	1919	7	1,707	...	...	...	...	2	...	2	123	2	244	2	667
	1914	7	1,835	...	...	...	...	2	...	2	193	2	231	2	862

¹ Figures for 1914 not available.

TABLE 7.—SIZE OF ESTABLISHMENTS, BY VALUE OF PRODUCTS: 1919, 1914, AND 1909.

VALUE OF PRODUCT.	NUMBER OF ESTABLISHMENTS.			AVERAGE NUMBER OF WAGE EARNERS.			VALUE OF PRODUCTS.			VALUE ADDED BY MANUFACTURE.		
	1919	1914	1909	1919	1914	1909	1919	1914	1909	1919	1914	1909
	All classes.....	59	59	52	12,625	12,557	12,228	\$50,235,101	\$26,659,365	\$29,153,723	\$24,848,549	\$9,729,221	$10,269,381
Less than \$100,000.....	3	114	111	66	1,560	1,304	180,264	829,449	1,540,922	91,401	1,398,636	1,246,769
\$100,000 to \$500,000.....	23	27	28	1,975	7,190	4,815	6,927,931	6,351,381	10,305,947	7,675,640	10,641,104	3,828,512
\$500,000 to \$1,000,000.....	15	10	12	2,182	4,817	7,109	10,305,947	11,802,943	17,971,697	5,180,985	5,684,793	3,920,565
\$1,000,000 and over.....	18	8	13	7,774	4,817	7,109	32,778,839	11,802,943	17,971,697	13,447,631	3,645,775	6,102,047
PER CENT DISTRIBUTION.												
All classes.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$100,000.....	5.1	23.7	21.2	0.5	4.4	2.5	0.4	3.1	1.9	0.4	4.1	2.4
\$100,000 to \$500,000.....	39.0	45.7	43.0	15.6	57.2	39.4	13.8	23.8	36.5	15.4	38.4	38.2
\$500,000 to \$1,000,000.....	25.4	17.0	18.7	22.3	38.4	58.1	20.6	28.8	36.5	22.1	37.5	59.4
\$1,000,000 and over.....	30.5	13.6	25.0	61.5	61.5	58.1	65.2	44.3	61.6	62.1	37.5	59.4

¹ Includes the groups "Less than \$5,000" and "\$5,000 to \$20,000."

MANUFACTURES.

TABLE 8.—NUMBER AND HORSEPOWER OF TYPES OF PRIME MOVERS: 1919, 1914, AND 1909.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
	1919	1914	1909	Amount.			Per cent distribution.		
				1919	1914	1909	1919	1914	1909
Primary power, total.....	1,040	589	354	28,741	25,864	18,737	100.0	100.0	100.0
Owned.....	92	145	162	11,501	17,666	15,950	40.0	68.3	85.1
Steam.....	90	135	150	11,297	15,996	14,385	39.3	61.7	76.8
Turbines.....	86	(1)	(1)	10,547	(1)	(1)	36.7	.....	.....
Internal-combustion engines.....	4	(1)	(1)	750	(1)	(1)	2.6	.....	.....
Water wheels and turbines.....	1	8	11	4	1,500	1,505	(2)	5.8	8.0
Rented—Electric.....	948	444	192	17,240	8,198	2,787	60.0	31.7	14.9
Electric.....	2,106	1,616	1,189	35,493	28,518	19,333	100.0	100.0	100.0
Rented.....	948	444	192	17,240	8,198	2,787	48.6	28.7	14.4
Generated by establishments reporting.....	1,158	1,172	997	18,253	20,320	16,546	51.4	71.3	85.6

¹ Not reported separately.² Less than one-tenth of 1 per cent.

TABLE 9.—FUEL CONSUMED, BY STATES: 1919 AND 1914.

STATE.	Cen- sus year.	COAL.			Coke (tons, 2,000 pounds).	Fuel oils (barrels).	Gasoline and other volatile oils (barrels).	Gas (1,000 cubic feet).
		Anthracite (tons, 2,240 pounds).	Bituminous (tons, 2,000 pounds).	Coke (tons, 2,000 pounds).				
United States.....	1919	27,374	96,387	256,781	419	658	5,386	.....
	1914	45,663	99,991	248,305	2,036	(1)	163,833	.....
Alabama.....	1919	.....	28,520	132,314	.....	.....	.....	175
	1914	.....	25,382	88,084	1,067	(1)	.....	.....
New Jersey.....	1919	16,751	21,067	32,255	10	50	.....	.....
	1914	30,094	17,539	46,146	692	.....	151,913	.....
New York.....	1919	106	1,096	3,601	8	70	.....	.....
Pennsylvania.....	1919	9,769	15,618	31,769	51	126	1,335	908
	1914	15,416	16,424	38,294	270	(1)	.....	.....
All other states.....	1919	718	30,086	56,842	350	412	3,876	.....
	1914	153	40,646	75,181	7	(1)	11,912	.....

¹ Included in figures for fuel oils.

SPECIAL STATISTICS.

Certain additional information concerning the quantity and value of products for the industry is collected by means of supplemental schedules, data for which are presented in Table 10.

Products—comparative statistics, by states. Table 10 presents detailed statistics of products for 1919 and 1914. The table shows distribution by states so far as the figures can be shown without disclosing individual operations. There is a considerable production of cast-iron pipe by establishments falling under other industry classifications, which has been included. With respect to 1914, this subsidiary production is included in the totals, but figures are not available to permit a distribution by states.

In 1919 there were 59 establishments in the classified industry, and 7 establishments in other industries reporting cast-iron pipe products. Of these, 18 establishments manufactured bell-and-spigot pipe, 15 flanged pipe, 3 culvert pipe, 22 gas and water pipe fittings, and 40 reported the manufacture of soil and plumbers' pipe and fittings.

The tonnage production of cast-iron pipe and fittings was 702,554 tons in 1919 as compared with 1,120,721 tons in 1914, a decrease of 37.3 per cent; but in value these products increased from \$25,979,192 in 1914 to \$48,514,581 in 1919, an increase of 86.7 per cent. The figures show an average ton value of \$69 for 1919 as compared with \$23.20 for 1914. Considering the different kinds of pipe products, there was a decrease of 51.7 per cent for the period 1914-1919 in tonnage of bell-and-spigot pipe, with an increase of 15.5 per cent in value; a decrease of 9.9 per cent in the tonnage of flanged pipe, with an increase of 143 per cent in value; a decrease of 18.5 per cent in culvert pipe, with an increase of 39.6 per cent in value; and a slight increase in tonnage of pipe fittings, namely, 1.8 per cent, with an increase of 212 per cent in value. Soil and plumbers' pipe and fittings increased 20.3 per cent in tonnage and 230 per cent in value. The figures show fairly uniform increases in unit values for the various classes, namely, bell-and-spigot pipe \$20 per

ton in 1914, to \$51 in 1919; flanged pipe, \$27 in 1914, \$72 in 1919; soil and plumbers' pipe and fittings, \$29 in 1914, and \$80 in 1919.

TABLE 10. PRODUCTS COMPARATIVE STATISTICS, BY STATES 1919 AND 1914

Quan- tity tons 2,000 pounds	Value	Quan- tity ton	Value
Total...	\$1,902,763	1,120,721	\$25,979,192
Cast-iron pipe industry	50,235,101	26,659,365	
Subsidiary cast-iron pipe products, other industries	1,667,602	1,443,242	
Cast-iron pipe and fittings	702,554	18,316,581	25,979,192
Gas and water pipe and fittings	147,881	28,124,128	1,009,069
Alabama	11,761	8,875,383	186,115
New Jersey	80,694	1,911,620	215,181
New York	2,068	234,352	576
Penns. Iwana	69,834	5,102,831	91,179
Other states	147,724	8,951,932	256,187
Bell-and-spigot pipe	375,203	19,257,663	1,288,003
Alabama	123,433	6,121,643	170,515
New Jersey	68,652	3,464,419	133,451
Penns. Iwana	67,236	3,519,357	180,994
Other states	115,882	6,149,211	262,343
Flanged pipe	23,741	1,411,250	1,27,289
Alabama	7,416	1,475,384	87,151
New Jersey	1,885	370,028	2,018
Other states	11,420	798,828	3,011
Culvert pipe	25,537	311,062	111,011
Fittings	13,200	6,808,153	1,411,864
Alabama	17,341	2,189,247	4,861
New Jersey	6,993	1,056,819	10,070
New York	2,069	251,352	10,596
Penns. Iwana	2,465	1,568,990	8,611
Other states	13,759	1,718,747	14,871
Soil and plumbers' pipe and fittings	234,673	20,390,463	1,211,632
Alabama	122,327	9,336,077	77,996
New Jersey	31,243	3,420,445	18,431
New York	18,988	1,518,978	10,596
Penns. Iwana	46,062	3,650,711	17,425
Other states	33,153	2,1,3,642	30,811
Other cast-iron pipe and fittings	16,401	1,614,405	13,381
Other products	1,773,717	681,737	1,411,648

¹ Includes production not distributed by states, 1914.

Gas and water pipe and fittings

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

7 Number of establishm'ts, 1914.

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

8 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

9 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

10 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

11 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

12 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

13 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

14 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

15 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

16 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

17 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

18 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

19 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

20 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

21 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

22 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

23 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

24 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

25 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

26 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

27 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

28 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

29 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

30 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

31 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

32 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

33 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

34 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

35 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

36 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

37 Includes production not distributed by states, 1914.

Gas and water pipe and fittings...

Bell-and-spigot pipe...

Flanged pipe...

Culvert pipe...

Pipe fittings...

Soil and plumbers' pipe and fittings...

MANUFACTURES.

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GENERAL TABLES.

Table 11 gives, for 1919, 1914, and 1909, a comparative summary, by states, for number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of

products. Table 12 presents, for 1919, the detailed statistics for the industry for such states as can be shown without disclosing the operations of individual establishments.

TABLE 11.—COMPARATIVE SUMMARY, BY STATES: 1919, 1914, AND 1909.

STATE.	Cen-sus year	Num-ber of estab-lish-ments	Wage earners (aver-age num-ber)	Pri-mary horse-power.	Wages	Cost of ma-terials	Value of prod-ucts.	STATE.	Cen-sus year	Num-ber of estab-lish-ments	Wage earners (aver-age num-ber)	Pri-mary horse-power.	Wages	Cost of ma-terials	Value of prod-ucts.
United States.....	1919	59	12,625	28,741	\$14,703	\$25,387	\$50,233	New York.....	1919	5	312	767	\$373	\$585	\$1,342
	1914	59	12,557	25,561	7,076	16,930	26,659		1914	3	213	293	124	186	370
	1909	52	12,228	18,737	7,502	18,884	29,154		1909	4	464	1,052	268	687	990
Alabama.....	1919	21	5,285	10,754	5,776	9,461	18,784	Pennsylvania.....	1919	7	1,707	3,892	2,148	4,134	\$7,710
	1914	20	3,696	6,130	2,034	3,967	6,734		1914	7	1,835	4,062	1,029	3,295	4,551
	1909	14	2,878	4,632	1,393	3,706	6,697		1909	5	1,435	2,531	711	2,423	3,531
New Jersey.....	1919	8	2,035	3,714	2,655	4,737	9,030	All other states.....	1919	18	3,256	9,614	3,753	6,450	12,369
	1914	9	3,424	4,785	1,991	4,784	7,335		1914	20	3,392	10,594	1,878	4,758	7,631
	1909	8	3,275	4,035	1,951	5,355	8,003		1909	21	4,176	6,487	2,179	6,713	10,530

TABLE 12.—DETAILED STATEMENT FOR THE INDUSTRY, BY STATES: 1919.

STATE.	Number of estab-lish-ments	PERSONS ENGAGED IN THE INDUSTRY.						WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						EXPENSES.			
		Total	Propri- tors and firm mem- bers	Salaried offi- cials, super- in- ten- dents, and man- agers	Clerks, etc.	Wage earners.		Number, 15th day of- Dec. 15, 1919	Total.	16 and over.		Under 16.	Salaries and wages.	Capital.	Officials.	Clerks, etc.	
						Male	Fe- male			Male	Fe- male						
United States.....	59	13,777	4	423	549	176	12,625	Dec. 15, 1919	Mh	9,733	15,651	15,542	72	37	\$42,863,026	\$1,385,596	\$1,045,616
Alabama.....	21	5,767	1	147	263	69	5,285	Dec. 15, 1919	Fe	3,551	6,948	6,913	31	12,365,071	499,709	477,142	
New Jersey.....	8	2,248		97	84	32	2,035	Dec. 15, 1919	Mh	1,602	2,372	2,368	3	8,637,290	238,403	171,945	
New York.....	5	350	2	14	14	8	312	Dec. 15, 1919	Fe	356	16	261	353	1,145,231	73,002	28,003	
Pennsylvania.....	7	1,839		55	87	10	1,707	Dec. 15, 1919	Fe	1,429	1,931	1,896	18	11,008,421	191,280	120,028	
All other states ¹	18	3,553	1	110	99	57	3,286	Dec. 15, 1919	Fe	4,047	4,012	16	19	9,707,013	383,2/2	248,498	
EXPENSES—CONTINUED.																	
Salaries and wages—Con.		Rent and taxes.			For materials.			Value of products.			Primary horsepower.			POWER.			
STATE.	Wage earners.	For contract work.	Rent of factory	Taxes, Federal, state, county, and local.	Principal materials.	Fuel and rent of power.		Value added by manufac- ture.		Total.	Steam engines (motors).	Steam turbines.	Inter- nal com- bus- tion engines.	Owned.	Re- nted (elec- tric).	Rent in estab- lish- ments re- port- ing.	
United States.....	\$14,705,398	\$37,705	\$20,782	\$1,246,173	\$22,744,779	\$2,641,773	\$50,235,101	\$24,848,549	28,741	10,547	750	4	200	17,240	18,253		
Alabama.....	5,776,258	5,413	13,380	453,139	\$8,381,774	1,079,183	18,784,305	9,323,348	10,754	3,545	7,209	5,841					
New Jersey.....	2,655,154			101,546	4,259,465	477,688	9,029,796	4,292,643	3,714	2,447	750	517	4,637				
New York.....	372,939			50,382	531,321	53,310	1,342,422	757,791	767	210	210	557	312				
Pennsylvania.....	2,148,481			4,404	406,601	5,837,182	316,810	5,709,771	4,355,779	3,892	1,585	2,307	1,447				
All other states ¹	3,732,566	32,382	2,998	234,505	5,735,037	714,782	12,568,807	5,918,988	9,614	2,760	4	200	6,650	6,618			

¹ All other states embrace: Ohio, 6 establishments; Virginia, 3; Maryland, 2; and 1 each in California, Georgia, Indiana, Massachusetts, North Carolina, Oregon, and Tennessee.

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